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I. ACCOMPLISHMENTS OF THE U-2 PROGRAM

I Introduction

Five years ago, before the beginning of the U-2 program, the United States had organized against the threat of surprise attack by the Soviet Union every one of the measures in the classical intelligence bag of tricks. U. S. Sources and analyses had given us a great deal of knowledge concerning the capabilities and intentions of the Soviet Union.

Classical intelligence sources, however, often deal in information that is hard to verify and difficult to interpret. These sources showed that the Soviet Union was developing a considerable military power. There remained many uncertainties concerning the level they had reached, the rate at which they were increasing their power, and their ultimate aims for its use.

This half-knowledge of the Soviet Union and uncertainty of its true power position posed tremendous problems for the United States. We were faced with the constant risk of exposing ourselves to enemy attack or of needlessly expending a great deal of money and effort on military preparations of our own which would become obsolete before they were needed.

To meet this situation, we determined to embark on the U-2 program to give the United States a firm foundation of hard information on which to make our intelligence judgments. The program has covered a large part of the most important areas in the Soviet Union and has

25X1

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provided information on a great variety of subjects important to our evaluation of the Soviet power position. Our main emphasis, however, has been directed against three critical problems, namely, the Soviet bomber force, the Soviet atomic energy program, and the Soviet missile program.

II. Intelligence of Soviet Offensive Capabilities Against the U. S. and Its Allies

A. Manned Aircraft

The Soviet bomber force has been, and remains today, the main offensive striking force of the Soviet Union. For many years, the status of the Soviet bomber program was a controversial topic in U. S. intelligence. For several years, much of our evidence from other sources indicated a Soviet bomber production rate lower than anticipated. Khrushchev and other high Soviet officials have also stated that the major Soviet offensive military arm was to be the ballistic missile and that bombers were becoming or had become obsolete in modern warfare.

The U-2 program has confirmed that only a minimum long-range bomber production program is continuing in the Soviet Union. It has shown that some Soviet aircraft plants have probably been converted to the production of transport aircraft and that a few may possibly be engaged in some aspect of the missile program. It has also shown, however, that the Soviet Union has recently developed a new medium-range bomber with supersonic capabilities.

During the life of the U-2 program, we have covered numerous Soviet long-range bomber air fields. From this coverage, we have been able to confirm our estimate of the disposition of Soviet long-range bombers and have acquired data on the nuclear weapons storage facilities associated with them.

B. Ballistic Missiles

Ever since the first Soviet ICBM vehicle was launched in August 1957, Soviet propaganda has claimed that the world power balance was shifting in the direction of the Soviet Union. For several years, we ~~had~~ ^{have} been aware that the Soviet Union was engaged in a high-priority ballistic missile development program.

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The U-2 program, however, has enabled us to look periodically at the actual ground facilities involved in the Soviet missile test program.

One of the most significant items of information acquired by the U-2 was revealed by our coverage of the Tyura Tam rangehead in the fall of 1957, immediately after the first Soviet ICBM firings. The significant fact was that the Soviets had only one launch facility at Tyura Tam with no indication of intention to build a second facility.

~~The photography showed this facility to be a massive concrete~~

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TOP SECRET

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The photography showed this facility to be a massive concrete structure sufficiently large to permit the launch of even larger vehicles than the relatively heavy Soviet ICBM and space vehicles.

The photography also showed that the Soviets were conducting all of their missile and space firings from a single launcher during the 1957-1959 period, clearly indicating a different concept from that used by the United States in the pre-launch checkout, erection, and firing of a missile. In fact, when these data were made available to representatives of the Air Force Ballistic Missile Division, some of whom assisted us in our evaluation of the photography, they immediately embarked on a careful review of our own concepts for the use of launch pads.

This photography also provided us valuable insight into possible Soviet operational doctrine regarding ICBM deployment. It showed a reliance on rail as the major means of logistic support and operations. The rail line actually ran onto the launch pad.

From these data and related information on Soviet transportation systems, we are led to believe that the Soviet operational deployment of ICBM's will be directly associated with their rail system. In fact, we cannot rule out the possibility of a semi-rail-mobile deployment concept. By this, I mean that the missile and its supporting equipment would be carried ^{on} trains and moved from one pre-selected site to another, thus making it difficult for us to determine the precise location of any given missile unit on a continuing basis.

25X1

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Even though the Soviet Union was able to sustain a considerable testing program from this one launch pad, photography of Tyura Tam during 1959 and 1960 has shown that a second and third launch complex were in varying stages of construction. The third launch complex is of a new type. It is too early to tell its intended purpose, but we have speculated that it may be used for a second-generation ICBM or that it may be the prototype of operational sites for troop training.

In summary, the photography collected by the U-2 has been a critical factor in our assessment that the Soviet ICBM program has not been and is not now a "crash" program; instead, it is an orderly well-planned high-priority program aimed at achieving an early ICBM operational capability.

In addition to our coverage of the ICBM test range at Tyura Tam, we have also had excellent coverage of the Kapustin Yar missile test range where Soviet intermediate and short-range missiles have been tested for the past 13 years. Since mid-1953, over 600 ballistic missiles have been fired on this range.

Our 1957 coverage of Kapustin Yar provided us our first information on the number and type of launch pads being used in this program. It also showed that the Soviets were dovetailing their development of operational equipment and troop training directly into their research and development program.

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1959 coverage of the same area showed that in two years the Soviets had doubled the number of launch pads and had available quarters for training about 6,000 troops in the operational use of these short- and intermediate-range ballistic missiles. It is apparent that the Soviet ballistic missile program is a dynamic and growing program.

In addition to our coverage of the two major ballistic missile test ranges, we have given top priority during the past year to the problem of ~~the~~ detecting the construction of launching sites for operational ICBM's. We have covered a number of the most highly suspect areas in the Soviet Union without having found a single launch site for operational missiles. We were able to prove, however, that a number of sites reported to us by other sources did not actually exist.

Certain other highly suspect areas in the Soviet Union have not been covered because of operational considerations, such as weather and sun angle.

We have had no opportunity to cover other large and highly suspect areas in the Soviet Union, and the mission [] was routed to give us the maximum amount of coverage possible in these areas. In view of the Soviet boasts about the shifting power position and our estimate that the Soviet Union could have a small number of missiles on launchers aimed at targets in the United States, we felt that it was essential that we provide the President with some assurance of the true state of the Soviet ICBM program before he was to meet Khrushchev in

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negotiations. This was particularly important in view of the fact that the negotiations were the direct outgrowth of the Berlin crisis generated by the Soviet Union.

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Approved For Release 2006/01/10 : CIA-RDP61S00750A000600150003-5

III. Intelligence Affecting the U.S. Deterrent Striking Force

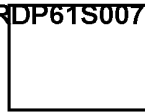
A. Target Location, Definition, and Refinement

Prior to the inauguration of the U-2 program, much of U.S. target information was based on materials captured during and immediately after World War II. Much of this information was becoming obsolete. To cope with this situation, U.S. air strike commanders were frequently required to assign aircraft, crews, and weapons in excess of that which would have been ~~needed~~ ^{needed} if detailed target information had been available.

As a result of the ~~hard information~~ ^{concrete evidence} acquired by the U-2 program on a large number of targets in the Soviet Union, it has now been possible for U.S. commanders to make a more efficient allocation of aircraft, crews and weapons. The excess crews and aircraft mentioned above have been assigned to the many new targets discovered in the program. In addition some targets were found to be more extensive than had been believed previously and thus required the assignment of additional crews and weapons.

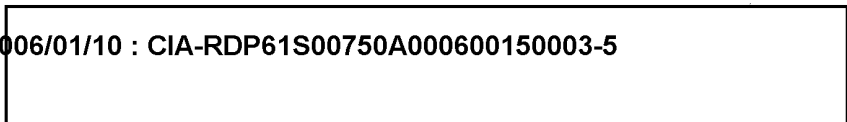
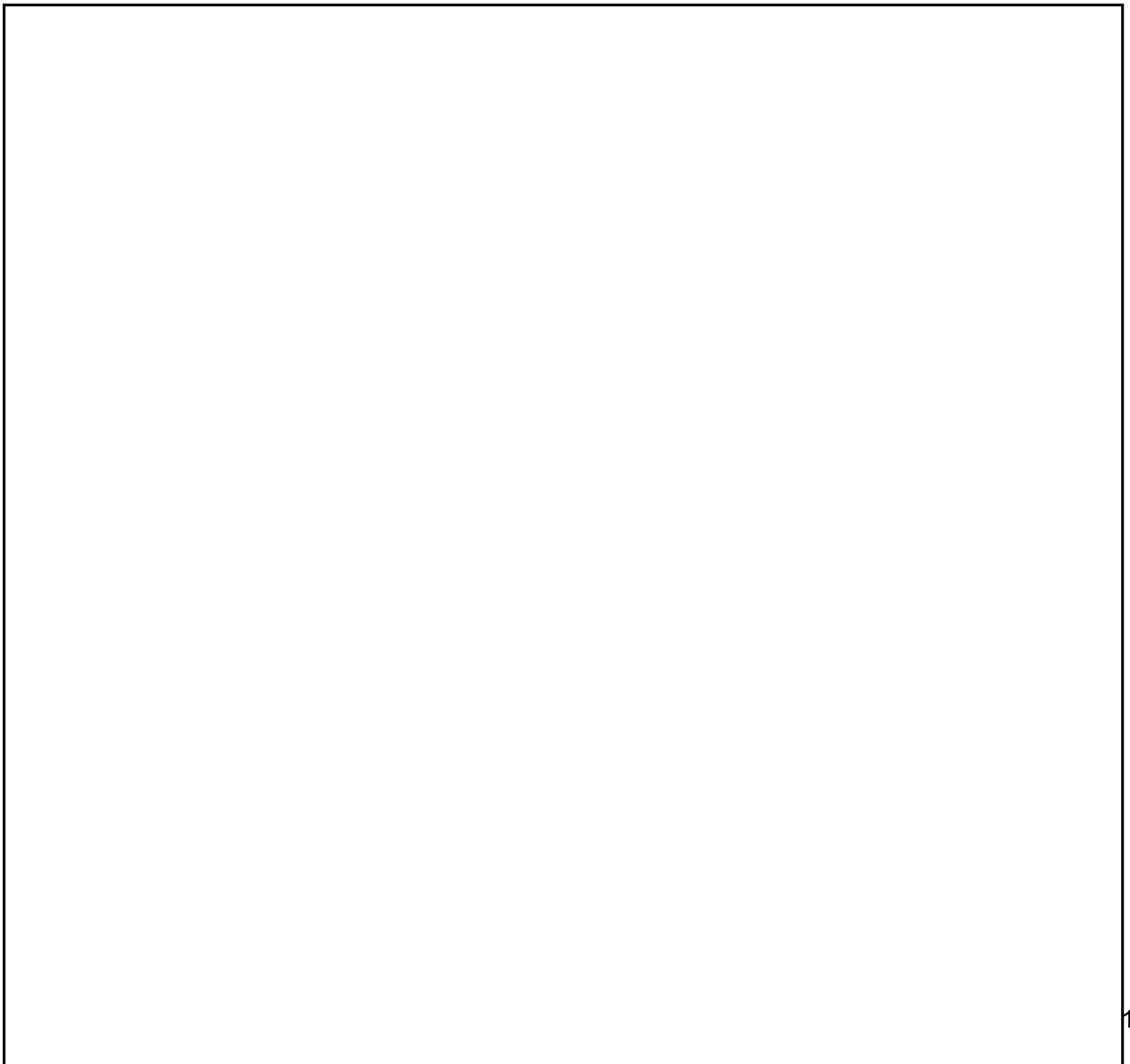
U-2 photography has also made it possible to provide new and accurate information to strike crews which will make it easier for them to identify their targets and plan their navigation more precisely.

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A major problem in developing targets for U.S. ICBM's is that of establishing the precise geodetic location of the target. This has been particularly difficult in view of the poor geodetic information available to the U.S. on the Soviet Union. The U-2 photography, however, is making it possible for the U.S. to establish much more accurate ~~geodetic~~ ^{target location} data for many of the areas covered by the overflights.

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C. Fighter Aircraft Defenses

The U-2 program has obtained photography on over a hundred fighter airfields. This has permitted us to determine the concept employed by the Soviets in their use of fighters as an air defense weapon.

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More important, however, the program has permitted us to observe these fighters in an active air defense capacity. [REDACTED]

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D. Surface-to-Air Missile Defenses

Prior to the beginning of the U-2 program we knew that the Soviet Union had established a massive system of surface-to-air missiles in 56 sites located on two concentric circles around Moscow. We had some indication that they intended to employ a similar system around other major cities such as Leningrad but the evidence on this point was inconclusive.

The U-2 program not only permitted us to obtain fuller information on the Moscow SAM system, but it also proved conclusively that this system was not being installed around other cities.

The 1957 photography of the Kapustin Yar missile test range showed that the Moscow SAM system had been developed at that range. In 1959 we discovered [REDACTED] that a new and much more flexible SAM system was being deployed around all major centers in the Soviet Union. We have photography on approximately

25X1D

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TOP SECRET
Approved For Release 2006/01/10 : CIA-RDP61S00750A000600150003-5

70 of the new sites and estimate that there are a total of 250 to 300 such sites in the USSR.

1959 photography of the Kapustin Yar test range also showed us that this second generation SAM system had also been developed at that range.

We believe that this second generation missile is the missile known to the intelligence community as the "Guideline" missile with an estimated altitude capability of 60,000 feet extending up to 80,000 feet with a considerably reduced accuracy.

This same photography also indicated a new surface to air missile development area which may be a third generation missile system, possibly for low altitude defense. However we have not seen this system deployed anywhere in the Soviet Union to date.

The data revealed by the U-2 program not only confirmed previous estimates that the Soviets were placing a very high priority on their air defense program but also provided positive evidence of the progress achieved.

The information on the Soviet air defense system, particularly that concerning surface-to-air missiles, has had a direct bearing on SAC's planning. The discovery of the second generation SAM system caused them to greatly increase their emphasis on low level penetration tactics.

Preliminary analysis of the photography collected on one of our most recent flights indicates that the Soviets may be engaged in research concerning anti-ballistic missile radars and tracking. It is too early, however, to determine whether or not these developments include ^{an} actual anti-ballistic missile development program.

IV ~~III~~. Evidence of Basic Soviet Intentions

To the extent that Soviet military capabilities and trends in their development constitute evidence of Soviet intentions, the U-2 program has provided us with a great deal of important information.

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We have seen that throughout the period the Soviet Union continued to give great priority to the development of a defensive capability in the form of surface-to-air missiles, fighters, and air defense radars.

By giving us better evidence concerning the Soviet development of specific weapons systems, the U-2 program has enabled the U.S. to

TOP SECRET

25X1

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tailor its own defenses more precisely to the actual Soviet threat.

The program has also given us increased confidence in our judgments concerning the issue of peace or war in crisis situations. Whenever the international situation becomes tense because of a ~~xxx~~ problem in some particular area, we are concerned whether the situation might get beyond control -- that someone on the other side might suddenly and irrationally unloose a big war.

For example, at the time of the Suez crisis the Soviet Union threatened the use of rockets. During the Lebanese and the Taiwan Straits crises in 1958, various Kremlin statements led us to wonder whether the Soviets might have misunderstood our intentions and were preparing for war. Again in the various peaks of the Berlin crisis since 1958 the same question has arisen. Our knowledge of Soviet military preparations, however, resulting from the overflight program, has given us an ability to discount or call the bluffs of the Soviets with confidence. We have been able to conclude that Soviet statements were more rhetorical than threatening and that our courses of action could be carried through without serious risk of war and without Soviet interference.

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